

IV.	Status of Amendments	page 3
V.	Summary of Claimed Subject Matter	page 3
VI.	Grounds of Rejection to be Reviewed	page 7
VII.	Argument	page 7
VIII.	Conclusion	page 15
IX.	Claims Appendix	page 16
X.	Evidence Appendix	none
XI.	Related Proceeding Appendix	none

I. Real Party In Interest

This application was originally filed on November 14, 2003, as Serial No. 10/713,871 naming Willis J. Mullet as the inventor. The application is a divisional application of copending U.S. application Serial No. 10/132,864 filed April 24, 2002, now U.S. Patent No. 6,951,237. The application was assigned at filing to Wayne-Dalton Corp., an Ohio corporation having its principal office and place of business at One Door Drive, Mt. Hope, Ohio 44660. The Assignment was recorded on the records of the Patent Office at Reel 012838, commencing at frame 0830 and numbering three pages. The recordation date for the assignment was April 24, 2002.

II. Related Appeals And Interferences

There are no other appeals or interferences known to Appellant, Appellant's legal representative or Appellant's assignee that will directly affect or be directly affected by or have a bearing on the Board's decision in the instant Appeal.

III. Status Of Claims

This application was originally filed with thirteen (13) claims. During prosecution, claim 10 was cancelled; claims 14-21 were added during prosecution. All pending claims, namely claims 1-9 and 11-21, inclusive, are finally rejected and the subject of this Appeal. The rejected claims are presented in their current form for this appeal in the attached Claims Appendix.

IV. Status Of Amendments

All amendments have been entered. A Response and Amendment B was filed subsequent to the Final Rejection from which this appeal is taken, which modified the dependency of claims 11-13 and addressed the definiteness objection regarding claim 15. The Amendment was entered by Office Action of July 6, 2005 which indicated the Amendment overcame the Claim Objections to claims 11-13 and the 35 U.S.C. § 112 rejection of claims 15-21. Accordingly only the obviousness rejections under 35 U.S.C. § 103 remain in issue for this appeal.

V. Summary Of The Claimed Subject Matter

The invention of the instant application relates generally to the configuration of panels for upwardly acting sectional door systems having a pinch-resistant section to section interface between the panels. While there are a number of patentable aspects to the instant application, the two independent claims, claims 1 and 15, and a substantial number of the dependent claims relate to the panel configuration and particularly the panel to panel interface between adjacent panels.

As shown in Fig. 2, door system 10 has panels 30 that have as a primary structural member a facer, generally indicated by the numeral 35, having a front surface 36 which may be essentially planar and extend substantially the height and width of panel 30. (Spec., p. 9, l. 23-26) Joint assemblies, generally indicated by the numeral 40, extend rearward of front surface 36 at the top 31 and bottom 32 of panel 30. Joint assemblies 40 may include a first joint member 41 and a second joint member 42 shown, as an example, at the top and bottom 31 and 32, respectively, of the facer 35. Stacking of panels 30 in the vertical, closed configuration of door 14, depicted in Fig. 1, causes respective first and second joint members 41, 42 on adjacent panels 30 to mate to form an interface, generally indicated by the numeral 38 in Fig. 2 between adjacent panels. At the juncture of facer 35 and first joint member 41, facer 35 transcends into an upwardly sloping shoulder portion 44 defining an offset that provides a seat for a projecting nose 45 formed between the front surface 36 and the second joint member 42 on a superjacent panel 30A. In this

respect, when adjacent panels 30A, 30B are in a planar orientation, as when the door 14 is in a closed position (Fig. 1), the nose 45 laps over the shoulder 44, in sealing relation of adjacent panels 30 at interface 38. This cooperative engagement of the nose 45 and shoulder 44 also aids in reinforcing panels 30 in their resistance to wind loads. (Spec., p. 9, l. 26 to p. 10, l. 9).

The second joint member 42 of panel 30A transcends a generally semicircular arc 48 extending from the nose 45 to a heel 46 formed between the second joint member 42 and tab 47 extending inwardly relative to the joint member 42 in a direction generally parallel to facer 35 and constituting the lower rear surface of panel 30. The tab 47 may have a return hem 47' to impart additional strength and rigidity to the panels 30. Heel portion 46 may be planar, as shown in Fig. 2, or transcend a downwardly projecting arc similar to nose 45. In either case, heel portion 46 provides a clearance at 49 for the first joint member 41 throughout its range of motion. (Spec., p. 10, l. 10-17).

First joint member 41 may include a raised portion, generally indicated by the numeral 50, received within the umbrella of second joint member 42 and generally intermediate of the nose 45 and heel 46 thereof. The raised portion 50 may extend the entire length of panel 30, or as will be appreciated, may be provided at one or more portions of the top surface of the panel 30. Raised portion 50 extends upwardly to an extent necessary to contact second joint member 42, when the panels 30 are oriented in a planar vertical position associated with the closed door condition, as shown in Fig. 2. (Spec., p. 10, l. 18-24).

Raised portion 50 may be integrally formed in first joint member 41, as by the first joint member 41 transcending an upwardly extending profile, which may include a stepped increase in the height of the first joint member 41 defining a raised portion 50 having one or more tiers. In the embodiment shown in Fig. 2A, a multi-tiered structure may include a first tier 51; a second tier 52 extending upwardly from the first tier 51; and a third tier 53, which is, in this example, the uppermost tier, extending upward from the second tier 52. Third tier 53 may have a generally planar top surface 54 (Fig. 3), which may contact the second joint member 42 in substantially a medial position relative to the front facer 36 and rear tab 47. The

area of contact, generally indicated by the numeral 55, between the first joint member 41 and second joint member 42 at raised portion 50 may be located at any intermediate point on first joint surface 41, such as, a point just rearward of the midline M, as shown in Fig. 2A. (Spec., p. 10, l. 25 to p. 11, l. 6).

To facilitate contact between the raised portion 50 and second joint member 42 when the door panels 30 are in the closed position, the top surface 54 of raised portion 50 may be given a slope at 57, as shown in Fig. 3, so that planar top surface 54 is substantially tangential to arc 48 of second joint member 42 at the contact area. From uppermost tier 53, first joint member 41 descends at 58 to substantially its initial level. As at the front surface 35 of panel 30, first joint member 41 may define an offset to provide a clearance for free relative rotation between adjacent panels 30. For example, first joint member 41 may extend downward and rearward in a linear fashion forming a sloped offset surface 56 that bridges first joint member 41 and tab 59 extending generally parallel to facer 35 and constituting the upper rear 48 of panel 30. The tab 59 may have a return hem 59' to impart additional strength and rigidity to the panels 30. (Spec., p. 11, l. 7-17).

To help support the door 14 and improve its rigidity, various vertical support members, such as stiles may be used in connection with the door panel 30. For example, end stiles, generally indicated by the numeral 70, may be located at the lateral extremities of panels 30. If necessary or desirable, one or more center stiles, generally indicated by the numeral 90 and described more completely below, may be located intermediate of the lateral extremities of panels 30. The end stiles 70, are generally elongate members that extend between the top 31 and bottom 32 of the panels 30. Stiles 70, 90 are adapted to fit within the confines of panels 30 and may be retained within facer 35 by the inwardly extending tabs 47, 59 located at the top 31 and bottom 32 of panel 30. End stile 70 generally includes a stile body 71, which may be hollow and have a box-like section. As shown in Fig. 1A, stile body 71 may be contoured at its top 72 and bottom 73 to substantially conform to the joint surfaces 41, 42 of the panels 30 and provide additional support thereto. For example, as shown in Fig. 4, the bottom 73 of an end stile 70 is made arcuate near its center to conform somewhat to the arcuate shape of the second joint member 42.

Similarly, the end stiles 70 may be provided with sloping portions at 65 (Fig. 6A) that conform to the sloped surfaces 56 of facer 35. The top surface 66 of stile 70 may be truncated such that the raised portion 50 of first joint member 51 extends beyond the top surface 65, as shown, for example, in Fig. 6A. (Spec. p. 11, l. 23 to p. 12, l. 10).

In accordance with another feature of the present invention, rollers, generally indicated by the numeral 100 in Fig. 1A, supported on the door 14 are positioned outside of the end stiles 70. Rollers 100 generally include a roller shaft 102 and wheel 103 coupled to the shaft 102 and freely rotatable thereon. (Spec., p. 14, l. 13-16). A roller carrier, generally indicated by the numeral 110, may be fitted within end stile 70 to secure the roller 100 thereon. Referring to Figs. 1A, 2 and 2A, the roller carrier 110 may include a hollow, block-like member or roller block 111 having an exterior surface 112 that generally conforms to the interior 113 of end stile 70 and may be inserted within the stile body 71 as indicated in Fig. 1A. (Spec., p. 14, l. 25-29). Roller block 111 may be open at its ends 123, 123 and define one or more openings 124 in which a roller 100 may be received. For example, as shown in Fig. 2A, a row of roller receiving bores 125 may be formed in the roller carrier 110 to provide multiple positions for receipt of the roller 100. (Spec., p. 15, l. 3-6). The walls of bores 125 may be of any material including metals and plastics. Similarly, roller carrier 110 may be made of any suitable material capable of sustaining wind loads, such as metals and plastics. For example, roller carrier 110, shown in the Figs. 2 and 2A, is constructed of a plastic material, which advantageously helps to reduce noise that ordinarily is emitted from conventional steel rollers and carriers. It will be appreciated that a plastic insert may be used with a metal roller carrier 110 to achieve similar noise reduction. (Spec., p. 15, l. 12-18).

Hinge assemblies, generally indicated by the numeral 130 in Figs. 1 and 1A, pivotally connect panels 30, as they travel from the vertical, closed position to the horizontal, open position. Preferably, as shown in Figs. 1A, 2, 2A, 3 and 3A, each hinge assembly 130 may include a single leaf hinge 131. The single leaf hinge 131 is a unitary member, which may have any shape capable of coupling adjacent panels, and a pivot point located to allow proper articulation of the panels 30. Single leaf hinge 131 may, as shown, take the form of a generally L-shaped member having a

first leg 132 extending adjacent the rear tabs 59 and 47 of the panel 30A and shorter second leg 133 extending inward toward the front face 36 of the panel 30B. The shorter leg 133 has an end 134 that interacts with the door 14 in a pivoting fashion. Referring to Fig. 2, second leg 133 of hinge leaf 131 may extend toward the front surface 36 of facer 35 and attach to the door 14 beneath the interface 38 of adjacent panels 30A and 30B. Second leg 133 may be oriented at an angle, which may be perpendicular (Fig. 2A), relative to first leg 132. The end 134 of second leg 133 may be pivotally attached to panel 30B by an end receiver assembly, generally indicated by the numeral 135 in Fig. 2 formed in the roller carrier 110. (Spec., p. 15, l. 29 to p. 16, l. 16).

As shown in Fig. 2A, end-receiving assembly 135 may include a boss 137 that extends toward the front face 36 of facer 35. An arcuate slot, generally indicated by the numeral 140, is formed adjacent the boss 137 to receive end 134 of hinge leaf 131. Boss 137 may be downwardly offset relative to the roller carrier 110 to provide clearance for the rotation of second leg 133 as the end 134 rotates about the boss 137. Slot 140 extends circumferentially about a portion of boss 137 and has a radius complementary to that of end 134, such that end 134 is permitted to rotate freely about boss 137. The slot 140 has a length sufficient for pivoting of the hinge 130 through the range of motion necessary for proper movement of the door panels 30 between the open and closed positions. (Spec., p. 16, l. 17-25).

VI. Grounds of Rejection to be Reviewed on Appeal

The two grounds of rejection presented for review in this appeal are:

- A. Whether claims 1-9 and 12-21 are unpatentable under U.S.C. § 103(a) over Ford et. Al. U.S. Patent 6,076,590 (hereinafter “Ford” patent); and
- B. Whether claim 11 is unpatentable under 35 U.S.C. § 103(a) over the Ford patent in view of Whitley U.S. Patent 6,553,618 (hereinafter “Whitley” patent).

VII. Argument

- A. The Rejection of claims 1-9 and 12-21 as unpatentable under 35 U.S.C. § 103(a) over the Ford patent.

1. Independent claims 1 and 15 and claims 4, 5, 7, 9, 14, 17 & 18 depending therefrom.

The final rejection in regard to independent claims 1 and 15 states the specific rejection in the Detailed Action at page 2 as follows:

As concerns claims 1 and 15, **Ford et al set forth** a sectional door (best illustrated in Figure 9) comprising a plurality of panels having a front facer and a rear surface, first and second joints being hinged together, the first joint having a primarily planar surface (formed by the top surface of member 104) perpendicular to the front facer, and the second joint having a arced curvilinear surface (viewed as inclusive of member 190). **What Ford et al do not set forth** is the rear surface and front facer being formed integrally. However, the examiner takes the position that forming separate members as one integral member, an **integration of parts**, or vice versa is **not** considered as patentable subject matter within an apparatus claim. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the separate members as one member in order to reduce the number of parts of the door and thereby the number of steps required to assemble the door.

The Ford patent discloses a sectional door purporting to have anti-pinch features; however, the construction of the panels as to their front surface, rear surface and joints therebetween are of a substantially different configuration than the structure specified in the claims of the instant application. Initially, the referenced Fig. 9 of the Ford patent discloses upper and lower joints or edge walls 190 and 192, respectively, of panels that are discontinuous. In the case of both joints 190, 191, there is a first portion of the joint that is integral with and extends inwardly from the front surface of the panel toward the rear surface and a second, disconnected portion of the joint, that is integral with a portion of the rear surface of the panel and extends outwardly and overlaps the first portion of the joints. The Office Action indicates that the second joint having a curvilinear surface, is the edge wall or joint 190 in Fig. 9. The first joint having primarily planar surfaces oriented perpendicular to the facer is said to be the top surface of the member 104, which is presumably the edge wall or

joint 192. The structure in the Ford patent does not meet appellant's invention, as claimed, for the following reasons.

It is undisputed that independent claims 1 and 15 specify that the first and second joints of appellant's panel "integrally" interconnect the front facer and the rear surface of the panel. Also undisputed is the fact that in the Ford patent the joints or end walls 190, 192 are not integrally connected with the front facer and the rear surface of the panel. Rather, both of the end walls or joints 190, 192 of the Ford patent are discontinuous as a portion of both end walls is attached to the front facer of the panel and a portion of the end walls is connected to the rear surface. As set for above, the Official Action admits that "**what Ford et al do not set forth** is the rear and front face being formed integrally." This admission is followed by the contention that "forming separate members as one integral member, an **integration of parts**, or vice versa is not considered as patentable subject matter within an apparatus claim." From this assertion it is then stated that it would be obvious to one of ordinary skill in the art to form the separate members of the Ford patent as one member "in order to reduce the number of parts of the door and thereby the number of steps required to assemble the door."

Initially, appellant is not aware of any accepted legal authority which would support the general proposition that forming separate members as one integral member is not considered as patentable subject matter within an apparatus claim. In that respect, appellant notes that no cases or legal authority are cited in support of this position or proposition urged in the Official Action. While forming as one integral member a plurality of separate members fastened together might be considered an obvious expedient, it is submitted that making a single integral member of a plurality of totally separate members cannot be considered as necessarily obvious to a person skilled in the art. This is particularly true where the members have drastically different configurations.

The Official Action attributes appellant's formation of the joint members as formed integral with the front facer and rear surface to "reduce the number of parts of the door and thereby the number of steps required to assemble the door." Appellant's continuous joint members which are formed integral with the front facer

and rear surface of the panel are constituted and oriented as set forth in independent claims 1 and 15 for the purpose of imparting rigidity and strength to the panel while maintaining a pinch-resistant construction. It is apparent from Fig. 9 of the Ford patent that having two piece end wall surfaces or discontinuous joints provides virtually no panel strength perpendicular to the facer and would permit essentially free flexure of the joints such that binding at the joints or displacement sufficient to permit the insertion of an object in the joints would clearly be possible. Thus, it is clear that appellant's structure regarding the integral joints is significant to the strong construction possible in the instant invention and has nothing to do with reducing the number of parts as suggested in the Office Action. This misinterpretation of the purpose of appellant's integrally formed joints with the front facer and the rear surface supports appellant's contention that the construction of the first and second joints is not obvious in view of the Ford patent.

Independent claims 1 and 15 also recite that the first and second joints between panels are "mateingly engaged in the closed vertical position of the sectional door." Referring to Figs. 8 and 9 of the Ford patent, there is provided in the instance of the flexible discontinuous edge walls or joints 190, 192 a seal 108 interposed therebetween which is configured to mate with both edge walls and has a dove tail connector which engages a dove tail connection slot in one of the edge walls, namely edge wall 192. Appellant's first and second joints which are integrally interconnected with the front facer and the rear surface, have sufficient strength and rigidity such that the first and second joints can matingly engage each other in the closed position of the door such as to provide panel to panel support and preclude penetration of the elements, such as water, between the joints without the necessity for a compressible seal between the panel sections as is taught by the Ford patent. Thus, independent claims 1 and 15 in having the joints engaging in the closed vertical position of the sectional door further distinguish the joints having a flexible seal as taught in the Ford patent.

Finally, claims 1 and 15 both recite that the first joint has "primarily substantially planar surfaces oriented substantially perpendicular to said front facer." This is the first joint member 41 reposing at the top of each of the panels. As seen

in Figs. 2 and 3 of appellant's drawings, tiers 51, 52 and 53 and the portions of member 41 to either side thereof, are substantially planar surfaces which are directed substantially perpendicular to the front facer surface 36 of appellant's door. The panel edge or joint 192, as depicted in Figs. 8 & 9 of the Ford patent, does not have a joint which has substantially planar surfaces, nor are the surfaces oriented or disposed perpendicular to the front facer of the door panel. As can be seen in Figs. 8 & 9, the portion of the joint 192 extending rearwardly from the panel facer is a curved surface which has a perpendicular portion directed downwardly toward the panel and a reverse leg portion extending back toward the panel facer. The portion of the joint connected to the rear surface 132 has a V-shaped section at its forward extremity. It is submitted that the two piece irregular configuration of panel edge 192 of the Ford patent can no way be described as having primarily substantially planar surfaces and certainly not oriented substantially perpendicular to the front facer. Thus, independent claims 1 and 15 of the instant application patentably distinguish over the Ford patent for a plurality of reasons.

Dependent claims 4, 5, 7, 9, 14, 17 and 18, referenced hereinabove, are deemed to be patentable solely on the basis of independent claims 1 or 15 from which they depend.

2. Claims 2 and 3.

The Official Action states that the Ford patent sets forth a first joint having a raised portion contacting a second joint. Claims 2 and 3 specify that appellant's first joint 41 has a raised portion 50 that contacts the second joint to bear a portion of the weight of an adjacent panel. In Figs. 8 and 9 of the Ford patent, it appears that the raised portion of joint 192 contacts the seal 108 rather than the joint 190 at the bottom of the adjacent panel. Claim 3 further specifies tangential contact of the raised portion of the first joint and the second joint which does not take place due to the seal 108 being interposed therebetween and configured to the adjacent portions of the joints 190, 192. Accordingly, it is submitted that dependent claims 2 and 3 contain independently patentable subject matter.

3. Claims 6 and 16.

The Official Action states that the Ford patent has a second joint being generally an arc. A feature of the instant invention is that the second joint at the bottom of the panels is “substantially an arc of a circle” whereas the first joint at the top of the panels is substantially planar and extends perpendicular to the front facer and is posed substantially within the circular arc of the second joint. In the Ford patent, a portion of the second joint 190 could be considered generally an arc of the circle; however, the portion of the second joint extending from the rear surface of the panel has a linear portion extending parallel to the panel faces with a second linear portion extending toward the front facer of the panel. It is submitted that this latter portion of the second joint of the Ford patent can in no way be considered an arc of a circle nor can the second joint be so considered as a whole.

4. Claim 8.

In regard to claim 8, the Official Action states that Ford sets forth the second joint having a heel portion and a recessed off-set on the first joint defining a clearance between the joints near the rear of the panels. It is submitted that the claimed clearance 49 when the panels are vertically aligned and throughout the range of motion as shown in Fig. 2 of the instant application, is not present in the Ford patent. This can be readily seen in Fig. 8 of the Ford patent. The heel portion of the second joint proximate the rear surface of the panel can be seen to repose upon and be supported by the first joint in the heel area. Thus, the clearance specified in claim 8 does not exist in and is contrary to the teaching of the Ford patent.

5. Claim 12.

The Official Action indicates in regard to claim 12 that Ford sets forth a hinge receiver on the roller carrier and a hinge. Claim 12 is a combination claim dependent upon claim 11 which recites that the panels have end stiles receiving roller carriers supporting the rollers for the door. The Ford patent does not disclose end stiles at the edge of the panels. The only structure approximate the edges of the panels of the Ford patent are the end brackets 168, 170, which are part of the hinge, 102. Thus, the Ford patent fails to disclose end stiles which are recited as part of the combination. Further, Ford does not depict roller carriers received in the end stiles

having a hinge receiver formed thereon. Rather, the guide roller mount 194, depicted in Figs. 7 and 13 of the Ford patent, is attached to the mounting wall of the end bracket. Thus, the Ford patent arrangement in regard to the roller carriers and hinges, together with the lack of end stiles, renders the teachings thereof deficient in regard to the combination recited in claim 12.

6. Claim 13.

In regard to claim 13, the Official Action indicates that Ford sets forth a hinge receiver, including an arcuate slot with the first end of the hinge being arcuate. Initially, claim 13 depends from claim 12 and claim 11 and is patentable due to the lack of teaching in the Ford patent of a stile and the other limitations of claims 11 and 12 described above. Claim 13 further recites the arcuate slot 140 in the hinge receiver 135 (See Fig. 2A). The claim further recites that the first end 134 of hinge leaf 131 is arcuate and travels in the arcuate slot 140 during pivotal movement of the hinge. The Ford patent does not disclose an arcuate slot or a hinge end that is arcuate. Ford does appear to disclose a linearly extended slot 186; however, the pin 164 which engages slot 186, does not have an arcuate end and does not travel within an arcuate slot. It is submitted that claim 13 clearly recites subject matter which patentably defines over the Ford patent.

7. Claim 19.

The Official Action indicates that in regard to claim 19, the Ford patent sets forth “joint surfaces having a plurality of intermediate surfaces and tiers (viewed as portions of member 192).” While it may be said that the Ford patent discloses a raised planar surface located intermediate said front and rear surfaces, such does not contact the second joint 192 due to the sealing member 108 interposed therebetween. Claim 19 further specifies that the first joint member has a plurality of “planar tiers” between the front surface and the raised planar surface. The first joint member of the Ford patent has a curved member extending from the front surface to the raised planar surface intermediate thereof. There are no raised tiers such as the tiers 51, 52 and 53 disclosed and described in appellant’s specification and shown in Fig. 2A of the drawings (Spec., p. 10, l. 25 to p. 11, l. 6). It is submitted that arbitrarily dissecting a curved line does not constitute tiers according

to the plane meaning of the word and particularly in the context of the specification and drawings of the instant application. In this respect, a tier is a row or layer of articles arranged one above another to constitute a plurality of layers. It is also to be appreciated that appellant's utilization of a tier configuration creates bends which effect a strengthening of the first joint member that would not be realized by the Ford curved configuration. Claim 19 is thus deemed to further patentably distinguish the teachings of the Ford patent in multiple respects.

8. Claims 20 and 21.

The Official Action indicates that in regard to claim 20, Ford sets forth panels having end and center stiles mounting the hinges. It is submitted that appellant's configuration employing end stiles 70 and center stiles 90 of conventional characteristics that extend vertically of the sections between joint members to effect strengthening or reinforcing of the section. The Ford patent does not disclose either end or center stiles in the context of the term as it is employed in the industry. The Ford patent does employ mounting channels or brackets as part of the hinge assemblies; however, such do not extend the vertical height of the panel or constitute a structural reinforcement for the panel itself. Accordingly, it is submitted that claims 20 and 21 recite independently patentable subject matter.

B. The Rejection of claim 11 as unpatentable under 35 U.S.C. § 103(a) over the Ford patent in view of the Whitley patent.

The final rejection in regard to claim 11 states the specific rejection in the Detailed Action at page 5 as follows:

Ford et al set forth the door, as advanced above, except for the roller carriers formed of plastic. However, **Whitley teaches** forming roller door carriers from plastic material. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the roller carriers of Ford et al by forming them from plastic material, as taught by Whitley, in order to reduce friction between the pads, and to reduce the weight of the overall structure.

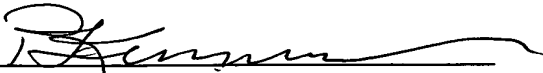
Claim 11 requires that the panels have end stiles which receive roller carriers supporting rollers. As discussed hereinabove, the Ford patent does not disclose roller

carriers positioned within end stiles for supporting rollers. Claim 11 further specifies that the roller carriers are constructed of a plastic material. Appellant's specification and claim 11 indicate that the roller carriers 110 may be made of a plastic material to reduce noise which is normally emitted by steel to steel contact. The Whitley patent does not teach the use of a plastic roller carrier but rather suggests that the roller hub 33 may be molded of a thermoplastic with a tread 43 of a rubber or thermoplastic elastomer. While the Whitley patent may teach friction reduction between the roller tread 43 and the tracks, the utilization of a plastic roller carrier to reduce noise is not taught or suggested by the Whitley patent. Accordingly, it is submitted that the subject matter of claim 11 patentably distinguishes the combination of the Ford and Whitley patents.

VIII. Conclusion

The final rejection of all pending claims of the instant application on the basis of obviousness is not supported by a demonstration in the final rejection making out a *prima facie* position. The independent claims contain multiple limitations not found in or suggested by the Ford reference and the recited principle for explaining admittedly missing limitations is not legally recognized. Numerous dependent claims contain limitations not met by or not acknowledged by the final rejection. As a result and for the reasons detailed above, a reversal of the final rejection of claims 1-9 and 11-21 is earnestly solicited.

Respectfully submitted,


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Claims Appendix

- 1 1. A sectional door movable between a closed vertical position and an open
2 horizontal position comprising, a plurality of panels having a front facer and
3 a rear surface, first and second joints spaced and joined by said front facer and
4 integrally interconnecting said front facer and said rear surface, said first and
5 second joints being hinged to permit pivotal movement between adjacent of
6 said panels and being matingly engaged in the closed vertical position, said
7 first joint having primarily substantially planar surfaces oriented substantially
8 perpendicular to said front facer and said second joint being a substantially
9 curvilinear surface, whereby a strong pinch resistant construction of said door
10 is provided.
- 1 2. The sectional door of claim 1, wherein said first joint has a raised portion
2 located intermediate said front facer and said rear surface of said panels, said
3 raised portion contacting said second joint to bear a portion of the weight of
4 an adjacent one of said panels.
- 1 3. The sectional door of claim 2, wherein said raised portion tangentially contacts
2 said surface of said second joint when said door is in the closed vertical
3 position.
- 1 4. The sectional door of claim 1 , wherein said second joint has a projecting nose
2 which is spaced no more than .2 inch from said first joint during movement
3 between the closed vertical position and the open horizontal position.
- 1 5. The sectional door of claim 1, wherein said surface of said second joint is a
2 generally concave surface receiving said first joint.
- 1 6. The sectional door of claim 1, wherein said second joint is substantially an arc
2 of a circle.

- 1 7. The sectional door of claim 1 further comprising, a downwardly extending nose
2 joining said front facer of the door to said second joint, and wherein said first
3 joint defines an offset portion near said front facer of said panels adapted to
4 receive said nose when said door is in the closed vertical position.

- 1 8. The sectional door of claim 7 further comprising, a heel portion formed on said
2 second joint near said rear surface of said panels, and a recessed offset formed
3 on said first joint defining a clearance between said first and second joints near
4 said rear of said panels.

- 1 9. The sectional door of claim 1, wherein said first joint is integrally formed on
2 a top surface of said panels and said second joint is integrally formed on a
3 bottom surface of said panels.

- 1 10. (Canceled)

- 1 11. The sectional door of claim 1, wherein said panels have end stiles receiving
2 roller carriers supporting rollers, said roller carriers being constructed of a
3 plastic material.

- 1 12. The sectional door of claim 11 further comprising, a hinge receiver formed on
2 said roller carriers, and a hinge having a first end pivotably received within
3 said hinge receiver and a second end attached to an adjacent one of said
4 panels, whereby said hinge pivotally connects adjacent of said panels.

- 1 13. The sectional door of claim 12, wherein said hinge receiver includes an arcuate
2 slot and said first end of said hinge is arcuate such that said first end of said
3 hinge travels within said arcuate slot during pivotal movement of said hinge.

- 1 14. The sectional door of claim 1, wherein said second joint has a large radius
2 curved surface.

1 15. A sectional door movable between a closed vertical position and an open
2 horizontal position comprising, a plurality of adjacent panels having a facer
3 integrally forming a front surface, first and second joint members extending
4 rearwardly of said front surface, and rear surfaces extending from said joint
5 members and substantially paralleling said front surfaces, hinges connecting
6 adjacent panels for articulation when moving between the open horizontal
7 position and the closed vertical position with said first joint member of one of
8 said panels in mating engagement with said second joint member of an
9 adjacent of said panels, said first joint member having primarily substantially
10 planar surfaces oriented substantially perpendicular to said front surface, and
11 said second joint member having a substantially curvilinear surface, whereby
12 said panels provide a strong pinch resistant construction.

1 16. The sectional door of claim 15, wherein said second joint member is
2 substantially an arc of a circle.
3

4 17. The sectional door of claim 16, wherein said arc has a large radius.

1 18. The sectional door of claim 15, wherein the junctures of said second joint
2 member with said front surface and said rear surface lie on a line substantially
3 perpendicular to said front surface.

1 19. The sectional door of claim 15, wherein said first joint member has a raised
2 planar surface located substantially intermediate said front surface and said
3 rear surfaces and contacts said second joint, said first joint member having a
4 plurality of planar tiers between said front surface and said raised planar
5 surface.

1 20. The sectional door of claim 15, wherein said panels have stiles mounting said
2 hinges and extending between said front surface and said rear surfaces.

- 1 21. The sectional door of claim 20, wherein said stiles include end stiles and at
- 2 least one center stile, said end stiles receiving and supporting rollers.